

U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Penstemon debilis*

COMMON NAME: Parachute Beardtongue

LEAD REGION: Region 6

INFORMATION CURRENT AS OF: March 6, 2006

STATUS/ACTION:

☐ Species assessment - determined species did not meet the definition of endangered or threatened under the Act and, therefore, was not elevated to Candidate status

☐ New candidate

☒ Continuing candidate

☐ Non-petitioned

☒ Petitioned - Date petition received: **03/15/2004; 05/11/2004**

☐ 90-day positive - FR date:

☐ 12-month warranted but precluded - FR date:

☐ Did the petition request a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES

- a) Is listing warranted (if yes, see summary of threats below)? YES
- b) To date, has publication of a proposal to list been precluded by other higher priority listing actions? YES
- c) If the answer to a. and b. is "yes," provide an explanation of why the action is precluded.

We find that the immediate issuance of a proposed rule and timely promulgation of a final rule for this species has been, for the preceding 12 months, and continues to be, precluded by higher priority listing actions (including candidate species with lower LPNs). During the past 12 months, almost our entire national listing budget has been consumed by work on various listing actions to comply with court orders and court-approved settlement agreements, meeting statutory deadlines for petition findings or listing determinations, emergency listing evaluations and determinations, and essential litigation-related, administrative, and program management tasks. We will continue to monitor the status of this species as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures. For information on listing actions taken over the past 12 months, see the discussion of "Progress on Revising the Lists," in the current CNOR which can be viewed on our Internet website (<http://endangered.fws.gov/>).

☐ Listing priority change

Former LP: ☐

New LP: ☐

Date when the species first became a Candidate (as currently defined): 02/26/1996

☐ Candidate removal: Former LP: ☐

☐ A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

☐ U – Taxon not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

☐ F – Range is no longer a U.S. territory.

☐ I – Insufficient information exists on biological vulnerability and threats to support listing.

☐ M – Taxon mistakenly included in past notice of review.

☐ N – Taxon does not meet the Act's definition of "species."

☐ X – Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Flowering Plant, Scrophulariaceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Colorado

CURRENT STATES/ COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE:
Garfield County, Colorado

LAND OWNERSHIP: About 69 percent of the occupied habitat and plants occur on private land owned by Occidental Oil. About 31 percent of the occupied habitat and plants occur on land managed by the Bureau of Land Management (BLM).

LEAD REGION CONTACT: Pat Mehlhop, (303) 236-4215

LEAD FIELD OFFICE CONTACT: Ellen Mayo, (970)243-2778, *14

BIOLOGICAL INFORMATION

Species Description

Parachute penstemon is a mat-forming perennial herb with thick, succulent bluish leaves, each about 2 centimeters (0.8 inch) long and 1 centimeter (0.4 inch) wide. Flowers are funnel-shaped, white to pale lavender, blooming during June and July. Shoots are produced that run along under ground, forming new plants at short distances. Plants are able to survive on the steep, unstable shale slopes where it is found by stem elongation as leaves are buried by the shifting talus. Buried stems progressively elongate downslope from the initial point of rooting to a surface sufficiently stable to allow the development of a tuft of leaves and flowers (O'Kane and Anderson 1987). Plants produce a low number of seeds, are primarily outcrossers, and have many different pollinators that vary between populations.

Taxonomy

Penstemon debilis was first described by O’Kane and Anderson (1987). There have been no challenges to the taxonomy as first put forward by the original authors. It is a monotypic species with an unquestioned taxonomy.

Habitat

The Parachute beardtongue grows on steep, oil shale outcrop slopes of white shale talus at 2,400-2,700 meters (8,000-9,000 feet) in elevation on the southern escarpment of the Roan Plateau above the Colorado River west of the town of Parachute, Colorado. It is found only on the Parachute Creek Member of the Green River Formation.

Historic Range/Distribution

Historic range and distribution for this species is unknown (Spackman et. al. 1997).

Current Range/Distribution

The parachute beardtongue is a very narrow endemic. The known occupied habitat is about 80 hectares (200 acres) in Garfield County. It is restricted to the Parachute Creek Member of the Green River Formation in the Piceance Basin. This geological stratum is the major source of oil shale in the United States and this species is one of several oil shale endemic plant species. The total area of the plant’s geographic range is about 3 kilometers (2 miles) wide and 29 kilometers (8 miles) long. The Green River Formation is fairly widespread in the Piceance Basin and has been extensively searched. However, additional populations of this species have not been discovered (Spackman et al. 1997).

Population Estimates/Status

The Parachute beardtongue is known from six locations, two of which have only a few plants. The total estimated number of plants is currently 1,443. There are only four populations considered viable by the Colorado Rare Plant Technical Committee, three of which are owned by an energy company. The largest population on BLM land was estimated to have 300-500 plants or rosettes in 1998 when it was discovered. By 2001, only 43 plants plus numerous rosettes were known (Colorado Natural Heritage Program [CNHP] 2004); in 2005 there are again about 500 plants (Mayo, USFWS, unpubl. lit. 2005; Scheck, BLM, pers. comm., 2005). The second BLM population had 200-300 plants reported in 1994, but only 3 plants could be found in 1998 (McMullen 1998). Fewer than 10 plants were observed in 2002 (CNHP 2004). The third population, discovered in 1996 on a road cut, had 10 plants, of which 3 can still be found (Center for Native Ecosystems et al. 2004). The fourth population was previously undocumented because access was denied by an oil company. A small part of this population, about 30 plants, is now known to be on BLM land; there are unconfirmed estimates of 300 more plants on the private portion (Trappett, BLM, pers. comm. 2005). The populations on BLM land represent about 38 percent of the total plants counted and estimated. Two large populations of 300 or more plants each are on Occidental Oil property (CNHP 2004).

OWNER	# OF PLANTS 2005
BLM	500
BLM	10
BLM	3
BLM	30
Occidental	600 (+300 estimated on land not accessed)
TOTAL	1,443

THREATS

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range.

This species is threatened by destruction of its habitat for natural gas production, oil shale production, other energy development and associated impacts resulting from increased access to the populations.

Existing gas leases at three BLM sites have stipulations for no surface occupancy and no surface disturbance in occupied habitat and in areas necessary for the maintenance or recovery of the species (Scheck, BLM, pers. comm. 2004). The large population at Anvil Points Mine on BLM-managed land has about 35 percent of the total known and estimated plants. Locked gates limit public access to the site. Part of this occupied habitat is not currently leased. When the new Resource Management Plan (RMP) amendment for the Roan Plateau is completed, this portion of the site is expected to be leased as well (BLM 2004). Whether no surface occupancy stipulations will be applied to protect candidate species under the new plan is not known.

The BLM recently approved an action under the Comprehensive Environmental Response, Compensation and Restoration Act (CERCLA) to remove health and safety hazards from the Anvil Points Mine site. Actions will include closing access to the mine adits and removing lead from the soil on the mine bench. Actions also could include complete closure of the access road below the mine bench. The BLM plans to complete the project design during the summer of 2006 and issue a contract in the fall. An inventory of the penstemon plants on the site will be completed during planning. About 300 of the 500 plants in this population will be included in the action area (Mayo, USFWS, unpubl. lit. 2005). An Action Memorandum from the BLM State Director specifies that the project be designed to avoid impacts to the Parachute penstemon plants (Goodenow, BLM, pers. comm. 2006). Plans will have to be implemented very carefully to avoid destruction of plants.

The second BLM population has diminished from “hundreds” of plants found in 1991 to fewer than 10 plants by 2002 and is no longer considered viable by the Colorado Rare Plant Technical Committee. Possible reasons for this decline include trampling and compaction by recreational users. The plants were at a roadside viewpoint and hang glider launch area. A barrier was installed to discourage gliders, but the population was not fenced. New plants grown off site from seeds were introduced but declined over several years. Monitoring failed to show a cause for the disappearance of the plants (CNHP 2004).

The third population, on a road cut, had 10 plants in 1996, of which 3 can still be found; it is not considered viable by the Colorado Rare Plant Technical Committee. The road is now heavily used daily by oil and gas company vehicles accessing private development sites on the Roan Plateau. A fourth population is mostly on Occidental land, perched on an unstable slope above a road that is currently used for access to an ongoing reclamation project at an old oil shale mine site. An unverified estimate of the number of plants on the Occidental part of this site is 33. Several plants on this road bank are dangling by their roots, and more would be lost here if the road right of way was widened. The BLM Grand Junction Field Office withheld the areas occupied by these two road bank populations from a new lease parcel sold in November 2005 (Trappett, BLM, pers. comm. 2006).

Populations 5 and 6, including about 600 (42 percent) of the plants, occur on land owned by Occidental Oil. These populations are behind locked gates. A portion of one population was included in the Mount Callahan State Natural Area. An oil shale production facility contiguous to the Natural Area was mentioned in the designation. Occidental's current plans for research, exploration or development at or near the three sites they own are unknown (Colorado Natural Areas Program [CNAP] 1987; Scheck, BLM, pers. comm. 2004).

The Piceance Basin is experiencing a "boom" in natural gas production at the present time. In 2004, Garfield County was one of two counties in Colorado issuing the greatest number of permits to drill, and it was one of the largest producers of oil and natural gas (Cappa et al. 2005). The number of new drilling permits approved in Garfield County was 1,508 in 2005, twice as many as in 2004, with another increase expected in 2006 (Macke 2005). The BLM projects that from the portion of the Roan Plateau that will be addressed in the new RMP amendment, around 3,916 billion cubic feet of natural gas will be developed over the next 20 years (Center for Native Ecosystems 2004).

On June 9, 2005, BLM announced in the Federal Register its intent to initiate a program to facilitate research, development, and demonstration of oil shale recovery technologies on Federal lands (70 FR 33753). The BLM recognizes this effort as a first step toward successful development of oil shale reserves. The Energy Policy Act of 2005 provisions require the Interior Department to complete a programmatic Environmental Impact Statement by February 2007 for a commercial leasing program for oil shale and tar sands resources on public lands. On December 13, 2005, the BLM published a notice of intent to prepare the document (70 FR 73791). Public scoping meetings were held in January 2006 for the Piceance Creek Basin, which includes the entire range of the Parachute beardtongue.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes.
None known.

C. Disease or Predation.
None known.

D. The Inadequacy of Existing Regulatory Mechanisms.

Parachute beardtongue has no Federal regulatory protection for about 62 percent of the total known and estimated plants because they are on private land. There are no State regulations that protect rare plant species in Colorado.

The BLM controls access by means of a locked gate to its one viable population containing about 35 percent of all the plants. Part of this BLM site is leased for oil and gas exploration with no surface occupancy allowed. The remainder of the habitat also will be leased under the new RMP, which has not yet been released. The preferred alternative for the new RMP amendment does not include a proposed Area of Critical Environmental Concern to further protect this species. This BLM population is impacted sporadically by Garfield County road stabilization which is done to maintain access to a transmitter tower located on the plant population. The BLM told Garfield County to apply for a right-of-way when the land was transferred from Department of Energy, but continues to allow unauthorized access by the County (Scheck 2004).

The BLM plans for the removal project described under Threats include a commitment to avoid adverse impacts to the plants, but decisions about the closure status of the site have not yet been made (Goodenow, BLM, pers. comm. 2006).

One population, which has been reduced to 10 plants, is on BLM land at a roadside viewpoint and hang glider launch area. A barrier was installed to discourage gliders, but the population was not completely fenced. On another BLM roadside population several plants are dangling by their roots from a bank that has been undercut by heavy equipment being used to access an oil shale mine reclamation site on private land. The plants are flagged and BLM will not approve road widening. The oil and gas lease has been withheld pending plans for protection of the plants (Trappett, BLM, pers. comm. 2006). The fourth BLM site with three plants is on another roadbank a few feet from heavy truck traffic on a gravel road. There are no barriers to shield the plants. There are no travel management plans that apply to roads such as these that were built before the plants were found.

A portion of one population of the larger populations was included in the Mount Callahan State Natural Area, which was designated in 1987 and is managed by CNAP (CNAP 1987). An oil shale production facility contiguous to the Natural Area was mentioned in the designation. The Natural Area agreement can be terminated at any time.

E. Other Natural or Manmade Factors Affecting Its Continued Existence.

Population sizes are small and vulnerable to occasional ground disturbance such as trampling by hikers and digging by fossil hunters (CNHP 2004). Climatic events, such as prolonged drought, also may adversely impact the species (CNHP 2004).

CONSERVATION MEASURES PLANNED OR IMPLEMENTED: Public access to the primary BLM population has been closed to protect the population by reinstallation of a locked gate in 2005 (Scheck, BLM, pers. comm. 2005). A planned CERCLA removal project at this site may result in permanent closure of road access (Goodenow, BLM, pers. comm. 2006). The BLM has withheld an oil and gas lease for two small sites pending conservation measures for the plants (Trappett, BLM, pers. comm. 2006).

SUMMARY OF THREATS

- The entire range of the species is small.
- There are only four viable populations
- Three of the four viable populations are on land owned by an oil and gas company.
- Plans are under way for a CERCLA removal project on the largest BLM population. Plans will have to be implemented very carefully to avoid destruction of plants.
- All populations are located in the Roan Plateau/Piceance Basin gas field development area where new privately owned wells are being drilled and new leases and applications for permits to drill are being issued in rapidly increasing numbers.
- All populations are endemic to oil shale bearing strata in the Parachute Creek member of the Green River formation, which is the focus of current BLM efforts to promote oil shale research and development.

LISTING PRIORITY

THREAT			
MAGNITUDE	IMMEDIACY	TAXONOMY	PRIORITY
High	Imminent	Monotypic genus	1
		Species	2*
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

RATIONALE FOR LISTING PRIORITY NUMBER

Magnitude: High

This species is an extremely rare edaphic endemic. The total estimated number of plants in 6 populations is 1,443 individuals. There are only four viable populations, three of which are owned by an energy company. The loss of any one of these four populations would represent a substantial diminution in the viability of the species. All six known populations face ongoing or potential threats including--oil and gas development; oil shale recovery; inadequacy of existing regulatory mechanisms; and potential stochastic events.

Imminence: Imminent

Oil and gas exploration and development continues to increase each year on and around the Roan Plateau. Five hundred sixty-six new wells were permitted in Garfield County in 2003, 796 in 2004, and 1,508 in 2005 (Macke 2005). The main access road to the Roan Plateau now has a guard at the gate to admit and log authorized vehicles. The guard recently reported that

300 vehicle-trips a day are made to private drilling sites on the Plateau (Mayo, USFWS, unpubl. lit. 2005).

A new lease was issued in November 2005 on the habitat for two of the small BLM populations, but the plant sites were withheld at the last minute. Both sites have heavy vehicles traveling within 2-20 feet of the plants (Mayo, USFWS, unpubl. lit. 2005).

About one third of the large BLM population will be leased after a new RMP amendment is completed, with stipulations not yet decided (Scheck, BLM, pers. comm. 2004). About two thirds of that same population will undergo a CERCLA removal action in 2006 or 2007. There is no information available from Occidental regarding their plans for development of the three population sites on their land.

Glenwood Springs is one of the BLM field offices that is implementing a new pilot project designed to expedite energy development in 2006. Federal government policies, technological advances and economics now appear poised for development of oil shale as well as natural gas. The level of threats this poses for the Parachute beardtongue is considered high due to the direct overlap of energy resources and all known species occurrences.

RATIONALE FOR CHANGE IN LISTING PRIORITY NUMBER

YES Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed?

Is Emergency Listing Warranted? NO. The one viable BLM population will be the subject of careful planning to protect the plants prior to a removal action under CERCLA. The removal project is expected to reduce the number of visitors to the mine tunnels at the site, and may result in complete closure of the access road (Goodenow, BLM, pers. comm. 2006). The three private populations could be developed at any time, but there is no information available to indicate that development plans are under way at this time.

DESCRIPTION OF MONITORING: The biologist for the BLM Glenwood Springs Field Office keeps us informed of issues affecting the species. She conducts onsite inspections several times a year, taking a U.S. Fish and Wildlife Service (USFWS) botanist along for two visits, and checks on two of the Occidental locations by permission at least once a year. We are assisting the State BLM Botanist in monitoring the trend in plant numbers on their largest population. The BLM Grand Junction and USFWS biologists together documented the location of the sixth population. The Colorado Rare Plant Technical Committee reviews the species' status at a Statewide meeting each year.

COORDINATION WITH STATES: The CNAP, which is the State agency with responsibility for native plants, and CNHP at Colorado State University reviewed the species' status and provided occurrence data to the USFWS. The CNAP reported no change in the status of their Natural Area adjacent to the Occidental-owned populations. The CNHP enters new population updates and status information into their data system and provides downloads to the USFWS via a section 6 agreement.

LITERATURE CITED

- Bureau of Land Management. 2004. Roan Plateau Planning Area, Draft Resource Management Plan Amendment and Environmental Impact Statement. Glenwood Springs Field Office, Colorado.
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- Colorado Natural Heritage Program. 2004. Biodiversity Tracking and Conservation Data System. Colorado State University, Ft. Collins. Element Occurrence Records for *Penstemon debilis*.
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- O’Kane, S.L., Jr., and J.L. Anderson. 1987. *Penstemon debilis* (Scrophulariaceae): a New Species from Colorado Endemic to Oil Shale. *Brittonia* 39(4):412-416.
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- Spackman, S., K. Fayette, K. Carsey, and R. Rondeau. 1997. Field survey and protection recommendations for the globally imperiled Parachute penstemon, *Penstemon debilis* O’Kane and Anderson. Colorado Natural Heritage Program, Colorado State University, Fort Collins, Colorado. Unpublished report prepared for Colorado Natural Areas Program, Denver.

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions or removal of species from candidate status, and listing priority changes.

Approve: /s/ Sharon Rose
Acting Regional Director, Fish and Wildlife Service

11/4/2005
Date



Concur: _____
Director, Fish and Wildlife Service

August 23, 2006
Date

Do not concur: _____
Director, Fish and Wildlife Service

Date